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ASH GROVE CEMENT WEST, INC.

Inter-Office Memorandum

Date May 17, 1985

To E. Hanson E. Voldbaek

From Kenneth J. Rone

Copies to E. Miller G. Wells
G. Jones R. Willis
J. Post
S. Sheridan

Subject Seattle Expansion Committee Meeting; May 8, 1985

Time Commenced: 8:45 a.m.

Attendance:

E. Hanson	S. Sheridan
E. Miller	E. Voldbaek
G. Jones	G. Wells
J. Post	R. Willis
K. Rone	

I. Introduction by AGCW President, G. Wells.

II. Reviewed Status of Permitting Efforts

A. Reviewed, for background, Lone Star permitting requirements for plant at Concrete, Washington.
B. All agencies and advisors share the opinion that there is no need to fear any insurmountable permitting obstacle.
C. Reviewed, for comparison, OPC permitting experience for plant at Durkee, Oregon.

1. Water related permits much more complex.
2. Air is similar as Clean Air Act PSD must be observed.

a. Plant is in a non-attainment area for particulates which must be offset by 1.10 ratio.
b. Industrial basin has no other non-attainment pollutants.

3. Reviewed Seton, Johnson and Odell's (SJO) opinions relative to March 28, 1985, memo E.M. to G.W.

a. SO_2

(1) 648 T/Yr will be accepted by agency per SJO.

(2) Differences in sulphur material balances versus Durkee stack emissions (10X) cannot readily be explained though organics in raw materials should be investigated.
(3) Can SO_2 be banked? This will be checked. (Note: It appears regulations limit banking only to those pollutants which have significant impact on a non-attainment area, thus SO_2 is not bankable. - K.R.)
(4) Modeling may be required.

b. NO_x

(1) Modeling will be required.
(2) PSAPCA has enough monitoring stations so we should not be married to costly monitoring program.
(3) EPA's BACT data could be the same as LAER relative to cement plant emissions.

D. Present Status.

1. PSAPCA - No reason to act on banking until we submit Notice of Construction at which time we are considered shutdown as per PSAPCA staff.
2. AGCW - Period of plant inactivity is an unnecessary risk. We should act on banking now.
3. As soon as flow sheets are available, we will submit application to construct.

E. Wharf Expansion.

1. Permitting cannot be pursued until we decide upon configuration.

a. Configuration is determined by whether we make or buy clinker. Buying Clinker from offshore requires dredging.
b. Determined that configuration could be provided with design contingency for deep dredging.

2. Brief discussion about raw material receiving/stockpiling configurations.
3. Potential consultants.

a. Shapirio and Associates propose to dovetail with SJO and together offer single permitting responsibility.
b. Swan & Wooster.

(1) Handling permitting for Riedel International's expansion on lot adjacent (south) to us.

(a) Their's will not involve dredging.
(b) The wharf configuration is not contiguous to our property line.
(c) Cost estimate is too high and is being reconsidered.

(2) Better political alliance with Riedel to be gained.

(3) Economies of common data to be realized.

F. Waterfront concerns.

1. Dredge spoil dumping limited by PCB contamination though Corps of Engineers seems to have little trouble.
2. Disposal dealine for fly ash, coal and slag stockpile.

a. May 1, 1985, plus 90 day extension.
b. Downside risk is paving and contained runoff.
c. These stockpiles and others must be removed before any construction.
d. Discussed Ideal's tepid response to our offer to sell to them.

(1) K.R. will document past contacts.
(2) G.W. will pursue with Mr. Bonnell.

e. Discussed restarting kilns.

(1) One kiln run would last seven (7) weeks.
(2) To use up all stockpiles, 28 week run. Will also require additional material importation.
(3) Objective should be to use up coal only.
(4) Additional help would be from other locations.

f. Material use at Durkee is feasible, but costly.

III. Reviewed Status of Raw Material Search.

A. Criteria for evaluation.

1. Four (4) component mix.
2. Alkali restriction.

a. Market demands $< 0.6\%$ even though State's is $< 0.75\%$.
b. Dust dumping is becoming impractical.
c. Historically difficult to locate lo-alkali materials in Western Washington.

3. Produce L.A. cement without bypass. Return all dust.
4. Dry, feedable materials.
5. Clays must be highly mineralized and non-sticky.

B. Limestone.

1. Blubber Bay quarry presumed.
2. MgO less than 3.5%? - Yes.
3. Continue to supply Genstar? - Yes.

C. Alumina.

1. IMP Kaolinitic clay usable, but managerially unreliable.
2. University of Washington fly ash seasonable, but they will pay us.

3. Blum sandstone property is for sale. AGCW should tie it up ASAP.

D. Iron.

1. Brief history of ASARCO smelter slag.

a. Balance of stockpile purchased by Genstar.
b. Other users looking for alternates.

2. Pitt Island mangetite unproven at this time.
3. White River silica may contribute to iron (and alumina) requirements.

E. Silica - White River.

1. Grindability is good.
2. Crystal size $<30\mu$.
3. Topography.

a. Further trenching is planned.
b. No question as to reserve.

4. With possibility of sale of this material to Ideal and Genstar, there is incentive to act now.
5. Committee said it should be tied up ASAP.

IV. Equipment Selection.

A. Little can be done until raw materials are selected.
B. Confirmed clinker capacity at 2200 S.T./Day.

1. Ball Mill for raw grind.
2. Single string preheater.
3. Planetary coolers. Mr. Post noted that clinker should be less than 210^{0} F.

C. Confirmed existing finish grind capacity between 650 and 750 MTONS.
D. Precalcining advantages.

1. Capital cost.
2. Brick cost.
3. Lower NO_x (BACT consideration).
4. Greater raw material flexability.
5. Would preclude planetary cooler.

E. Firing system needs improvement over Durkee, considering the following:

1. Ball Mill.
2. Indirect firing.

F. Homo system.

1. Detailed discussion on application of various homogination strategies for plant making two types of clinker.

G. Discussed the merits of cooler designs.

1. Planetary.
2. "G".
3. Grate.
4. Rotary.
5. Effect of above on clinker temperatures, cement temperatures and operating costs.

a. 120^{o} F cement is a market requirement.
b. "Quench Cooling" myths discussed.

H. Wharf unloader parameters.

1. 750 S.T./Hr.
2. Grab bucket on rails with conveying to storage.
3. Must be flexible to receive any type of barge or ship.

V. Time Table Considerations.

A. Present clinker contract expires in May 1988.
B. Demolition.

1. No price estimate available.
2. Permitting required.
3. Should be pursued as soon as decision is made to build.

C. Process flow sheet and specifications are required to refine budget cost.

1. Suppliers will supply equipment lists without charge.
2. Hire a consultant to do proposed layouts.
3. Do we have geotechnical data? - Yes.

D. Should project be turnkey or self-managed?

1. No consensus.
2. Turnkey will be more expensive.
3. Validity of guarantees is in reality questionable.
4. Recent experiences will cause turnkey suppliers to dial in more dollars for risk.

E. Present estimate.

1. $73,000,000 for 700,000 TPY plant.
2. Does not include plant demolition.
3. Based on updated cost by F.L. Smidth and Hoffman of Donald R. Warren study done for LSI in 1976.

F. AGCW should draft a proposed Scope of Work. Mr. Voldbaek assigned to do this.
G. Proposed and accepted that Storch Corporation do layout.
H. Scope and layout available for board review.

1. August meeting.
2. If approved, go for bid with added specification package.
3. May request bids both ways (turnkey versus self-managed).

I. January 1986 ground breaking.

1. Possible? - No.
2. May 1988 completion may be unrealistic.

VI. New Plant Objectives:

A. Saleable product.
B. Environmentally acceptable.
C. Hi run factor.
D. Flexible.
E. Easy to maintain.
F. Two kinds of clinker.
G. Asthetically pleasing.

Time Adjourned: 2:10 p.m.